

VEGETATION

1997

Data was collected from 29 vegetation monitoring plots on the Wood River Wetland properly during 1997. Twenty of the plots were originally established in 1995, and 9 plots were first established in 1996 to complete the planned plot design for vegetation monitoring. The objective is to monitor vegetation change over time in response to wetland restoration management actions. Since the changes in plant community that may occur as a result of restoration actions is unknown, a minimal area could not be determined for the size of the releves (vegetation plots). Therefore, a standard releve size of 100M2 (5.64 m radius circular plots) for grassland-type plant communities was used. Coordinates for each plot were determined in 1996 using a GPS. Details of the sampling methods are included in the 1995 monitoring report.

Nine species were encountered in the sample plots for the first time in 1997. Some of these species were already known from then property, but five species are new to the species list for the property. Occurrence of these species in the same plots and qualitative observation of changes in relative abundance of some species are probably related to the continuation of the current water management regime that is designated to facilitate the construction phase of the restoration process.

This completed baseline monitoring for vegetation change in the interior wetland area of the Wood River Wetland. Therefore, no vegetation monitoring plots were sampled during 1998.

1998

During 1998, initial restoration water levels were maintained in the interior of the Wood River Wetland. Significant changes in vegetation were qualitatively observed during this first growing season of restoration water levels. Therefore, it is planned to sample all 29 vegetation monitoring plots during 1999 to more quantitatively describe the observed vegetation changes. This sampling will be earlier than the 3 to 5 year interval initially planned after baseline data were collected.

1999

Data were collected from 30 vegetation monitoring plots on the Wood River Wetland during 1999. Twenty of the plots were originally established in 1995, and 9 plots were first established in 1996 to complete the planned sampling design for vegetation monitoring. One new plot was established in 1999 within the riparian wetland created by filling a portion of the previously dredged Wood River channel. The objective is to monitor vegetation change over time in response to wetland restoration management actions. Since the changes in plant community that may occur as a result of restoration actions is unknown, a minimal area could not be determined for the size of the releves. Therefore, a standard releve size of 100 m² (5.64 m radius circular plots) for grassland-type plant communities was used. Coordinates for each plot were determined in 1996 using a GPS. Details of the sampling methods are included in the 1995 monitoring report.

A preliminary tabulation of the data for selected species from 1997 and 1999 shows that the changes in water management have resulted in some changes in the vegetation.

Reed canary grass (*Phalaris arundinacea*) decreased in frequency (percent of plots in which it occurred) from 59% in 1997 to 48% in 1999. Similarly, quack grass (*Elytrigia repens*), an exotic pasture grass, listed as noxious by the state weed board, also decreased in frequency from 28% in 1997 to 10% in 1999. At the same time, several emergent obligate wetland species increased in frequency. The frequency of spike rush (*Eleocharis macrostachya*) was 79% in 1997 and 86% in 1999, Baltic rush (*Juncus balticus*) was 55% in 1997 and 62% in 1999, and hardstem bulrush (*Scirpus acutus*) was 14% in 1997 and 17% in 1999. Two other obligate wetland species, cattail (*Typha latifolia*) and giant bur-reed (*Sparganium eurycarpum*), were not found in any plots in 1997, but occurred in five plots (17% frequency) and two plots (7% frequency) respectively in 1999. These changes indicate that conditions at the Wood River Wetland support the establishment of native plant species adapted to wetlands, and are less conducive to the persistence of species adapted to seasonal or marginal wetlands.

Several submerged and floating aquatic species were found in the vegetation sample plots for the first time during the 1999 sampling. Coontail (*Ceratophyllum demersum*) was found in eight plots (28% frequency), Canadian waterweed (*Elodea canadensis*) was found in two plots (7% frequency), and common duckweed (*Lemna minor*) was found in 11 plots (38% frequency). These are all obligate wetland species, and their newly established populations indicate that conditions at the Wood River Wetland support a functioning wetland ecosystem.

While these changes in frequency show the general trend at the site, a closer examination of the data shows that the vegetation is still in a dynamic state of change. For example, reed canary grass, considered weedy and invasive by some, increased in cover/abundance in 5 plots, decreased in 2 plots, came into 4 plots, dropped out of 7 plots, and only remained unchanged in 3 plots. Similarly, spike rush, a common emergent, obligate wetland species, increased in cover/abundance in 9 plots, decreased 5 plots, came into 5 plots, dropped out of 3 plots and remained about the same in 6 plots. Therefore, future monitoring should detect more changes in the vegetation, with a general trend towards the establishment of a plant community typical of a functioning wetland.

A list of plant species that have been identified on the Wood River property is available in the botany files at the Klamath Falls Resource Area office.